REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

Claims 1-8 and 11-15 are currently pending in this application.

Allowed Claim

Applicant appreciates the allowance of claim 5 by the Examiner.

Claim Rejections

Claims 1, 4 and 6-8 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,164,959 to Cai et al. (hereinafter "Cai") in view of U.S. Patent No. 4,550,414 to Guinon et al. (hereinafter "Guinon"). Applicant respectfully traverses this rejection for at least the following reasons.

As noted in a previous reply, embodiments of the present invention relate to methods of searching digital communication in a system in order to obtain a signal symbol through specific correlation techniques. Accordingly, as recited in claim 1, a method of searching digital communication signals in a system combines a plurality of channel measurements, provides output of the combining of channel measurements as an added input to the combining a plurality of channel measurements, and acquires a signal symbol based on results from the combining of channel measurements without addressing every timing hypothesis individually via a correlation operation.

The Examiner acknowledges that Cai fails to teach or suggest that "the symbol acquisition is done without exhausting every timing hypothesis through correlation operation." Office Action dated August 26, 2008, Page 4. The Examiner cites Guinon as disclosing this feature. Applicant respectfully disagrees with the Examiner's interpretation of the disclosure of Guinon as it relates to the pending claims and notes that Guinon fails to cure the above-noted deficiency of Cai.

As noted previously by Applicant, rather than disclosing the features of the present invention, the portion of Guinon cited by the Examiner actually teaches away from the invention as recited in claim 1. The portion of Guinon cited by the Examiner appears in the "Background of the Invention" section of Guinon. However, even a cursory reading of the entire disclosure of Guinon reveals that not only does Guinon not teach the features of the present invention, but rather proceeds to teach away from it by proposing the use of an adaptive weighting system to decrease signal acquisition time.

The Examiner alleges that Guinon teaches "depending upon channel condition and signal phase probabilities the range of a correlation detector can be narrowed so that not all timing hypotheses are addressed through its function." Office Action dated June 13, 2007, Page 3. However, when considered in context, the portion cited by the Examiner specifically recites an attempt to decrease acquisition time in a fixed weighted system. Referring to the information disclosed in the paragraph preceding portion the cited by the Examiner, Guinon discloses that all fixed weighting systems "suffer from non-adaptive assigning of weights." (Guinon, Col. 2, lines 49-62). Guinon further teaches that due to the fact that fixed weighted systems have extended acquisition ranges, which intrinsically requires extended acquisition time, a change of detector range is required and is accomplished by adding and decreasing shift register bits. The portion of Guinon cited by the Examiner, when read in context, further discloses that the specified prior art system (Guinon, Col. 3, lines 14-16) "describes a detection and tracking system which permits rapid acquisition but does not involve adaptive tracking or combined adaptive acquisition and adaptive tracking since it relies solely on statistical methods of computing error. In short no sampling is used to automatically adjust weight." (Guinon, Col. 3, lines 18-23) Thus, the cited prior art relied upon by the Examiner fails to teach or suggest the features of the present invention, particularly when the cited references are presented in context. Performing the functions, as provided in context and within the "Background" section of Guinon may provide a decreased acquisition time, but only when applied to systems involving weighted systems having additional shift register bits and with no sampling.

In the "Response to Arguments" section of the pending Office Action, the Examiner wrongly presents Applicant's argument above as "since the portion of Guinon cited by the Examiner is from the background of invention, therefore Guinon teaches away from the combination cited in claim 1." Office Action dated August 26, 2008, Page 2. Applicant respectfully notes that the Examiner has misinterpreted Applicant's argument presented above, as well as in Applicant's response filed June 5, 2008. Specifically, it is not the mere fact that the cited portion appears in the Background section of Guinon, but rather the context of Guinon in which the cited portion appears. Specifically, in accordance with the disclosure of Guinon, the alleged prior art "does not involve adaptive tracking or combined adaptive acquisition and adaptive tracking since it relies solely on statistical methods of computing error." Thus, one of ordinary skill in the art would not modify the disclosure of Cai with the teachings of Guinon to achieve the present invention as recited in independent claim 1.

Therefore, independent claim 1 is patentable. Claims 4 and 6-8 depend, either directly or indirectly from allowable claim 1 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cai in view of Guinon and further in view of Loeliger *et al.*, "Probability Propagation and Decoding in Analog VLSI," IEEE Trans. on Information Theory, Vol. 47, No. 2, pgs, 837-843, Feb. 2001. Claims 2 and 3 depend, either directly or indirectly, from allowable claim 1 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Claim 11 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,347,580 to Bond (hereinafter "Bond") in view of Guinon. Applicant respectfully disagrees.

As acknowledged by the Examiner, Bond fails to disclose that performing partial sums includes rotating and combing all combinations of the samples. Instead, the Office Action relies on Guinon as disclosing this feature of claim 11. Again, Applicant respectfully disagrees with this interpretation of the disclosure of Guinon.

As noted above, the portion of Guinon cited by the Examiner, instead of disclosing the present invention, teaches away from the invention as recited in claim 11. Further, the portion of Guinon cited and relied upon by the Examiner fails to cure the deficiency of Bond. While Guinon discloses that each correlator in a bank of correlators is provided with progressively advanced and retarded local PN code generator sequences (Guinon, Col. 2, lines 26-29), this signifies only that each correlator is provided with a phased sample, but not a rotation and combination of all combinations of a plurality of sample groups, as is recited in Claim 11. Providing a retarded or progressively advanced phased replicas of predetermined noise code is significantly distinguished from providing a rotated and combined combination of sample groups. Further, nowhere does Guinon teach or even suggest that the replicas are grouped or permutated within groups in order to provide these samples to each individual correlator located within the bank of correlators.

Therefore, independent claim 11 is patentable.

Claim 12 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bond in view of U.S. Patent Application Publication No. 2003/0147365 to Terasawa et al. Claim 12 depends from allowable claim 11 and is, therefore, patentable for at least that reason, as well as for additional patentable features when that claim is considered as a whole.

Claim 13 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Publication No. 2002/0094017 to Wang (hereinafter "Wang") in view of Bond. Applicant respectfully traverses this rejection for at least the following reasons.

The Office Action alleges that Wang teaches "a searcher method that separates incoming samples into an even and odd phase group, provides the samples to a demodulator, as needed, and provides the samples to a searcher." The Examiner further alleges that Wang "shows that a portion of the incoming stream goes to the demodulator and the other portion goes to the searcher. The second portion has been interpreted as the portion not needed by the demodulator." Office Action dated June 13, 2007, Page 2. Applicant respectfully disagrees with the Examiner's interpretation of the prior art. Specifically, Applicant respectfully notes that, according to the disclosure of Wang, there is no sample provided to the searcher when

not needed by the demodulator. Wang discloses that two portions of incoming data stream are always provided, whether necessary or not. See e.g., Wang, Fig. 4 and corresponding description. Accordingly, Wang discloses that "a signal output 202 is sent to a multipath signal searcher block 204 and to a finger demodulator/combiner block 206." Wang, paragraph [0023].

To the contrary, embodiments of the present invention provide that the samples given to the searcher are conditional on the demodulator not needing samples. Accordingly, claim 13 recites "providing digital samples from the even phase group of sample buffers or the odd phase group of sample buffers to a searcher when not needed by the demodulator." Thus, Wang fails to teach or suggest at least this feature of claim 13. Bond fails to disclose this feature as well.

In the "Response to Arguments" section of the pending Office Action, the Examiner argues that Wang illustrates in Figure 4 "that a portion of the incoming data stream goes to the demodulator and the other portion goes to the searcher." Office Action dated August 26, 2008, Page 3. The Examiner further argues that the second portion "has been interpreted broadly as the portion not needed by the demodulator." Applicant respectfully notes that no matter how broadly the disclosure of Wang is interpreted, it nevertheless lacks any teaching or suggestion that the second portion is not needed by the demodulator. The Examiner is unilaterally adding this feature to the disclosure of Wang.

Contrary to the Examiner's interpretation, the description of Figure 4 in Wang demonstrates that there is no separate portion sent to the searcher. Instead, the signal output 202 is sent both to the searcher block 204 and the demodulator 206.

Thus, the cited references, either alone or a combination, fail to teach or suggest each feature of claim 13. Therefore, claim 13 is patentable.

Claims 14 and 15 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Wang in view of Bond and further in view of U.S. Patent No. 4,484,028 to Kelly et al. Claims 14 and 15 depend, either directly or indirectly, from allowable claim 13

and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 27 October 2008

By /G. Peter Albert, Jr./

FOLEY & LARDNER LLP
Customer Number: 30542
Telephone: (858) 847-6735
Facsimile: (858) 792-6773

G. Peter Albert Jr.
Attorney for Applicant
Registration No. 37,268